JANUARY 1967
VOL. 32 NO. 6

Soil Conservation

DEVOTED TO THE WISE USE OF
LAND AND WATER RESOURCES

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SOIL CONSERVATION SERVICE U. S. DEPARTMENT OF AGRICULTURE

Changing . . .

There's a ferment in the land, a reordering of resource use that is involving conservationists in new and broader concerns with human welfare.

The Vice President of the United States in our lead article this month (p. 123) shows his personal interest in this aspect of the New Conservation.

The dramatic example he describes of regional cooperation in his Lake States homeland is a pattern for what needs to happen—and is beginning to happen—in other parts of the country.

Teamwork: Community resource planning takes teamwork in many directions. Such teamwork is apparent in reports this month of significant planning efforts.

The executive director of a regional planning agency in Connecticut, Richard B. Erickson, joins with SCS Conservationist Bob Laramy to tell (p. 126) how towns in that State spell out details of resource use within regional framework plans.

And a local team that labored over practical guides for oncoming urbanization of Cato Township in New York—Planning Commission Chairman Neville Mapham and SCS WUC Charles Barnett—coauthor (p. 128) an account of their experiences.

Another work unit conservationist, Martin Kangas, gives us an example (p. 133) of the "broad area planning" that stemmed from the Land and People Conference in the Vice President's own country.

COVER: The rural scene changes as subdivisions move into farmland in Lake County, Ind. Urbanization like this calls for replanning America's landscapes.

Soil Conservation

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Regional Cooperation in Conservation

By Honorable Hubert H. Humphrey

AMERICA's landscape is constructively changing as better use is made of our vast resources.

As I travel around our continent, I am impressed not merely by the new look in city and countryside, but also by a new outlook. A heightened interest in improving the quality of life has resulted in unprecedented teamwork which extends across the boundaries of towns and States to entire regions.

The area with which I am most familiar—the north country around Lakes Superior, Michigan, and Huron—is stirring with dramatic cooperation. In a vast 56-million-acre expanse, filled with wonders of natural beauty and still-to-be-realized promise, three States—Minnesota, Wisconsin, and Michigan—are working together to build a sound, fruitful economy. They see the region's vast woodlands and bountiful waters in a broader perspective than ever before.

Time and change

The States that share the region share with other parts of the Nation a common experience—the impact of time and change on the traditional economic structure.

Timber from the area still serves a broad market, but the logging era of a colorful past lingers only in history.

The rich fur trade is but a memory.

The great mining days of iron ore along the Mesabi Range have given way to a new era of taconite.

Depleted as well as new-found resources, new techniques replacing the old, fewer jobs for the miner and woodsman, but more opportunities for new services—these facts tell the story of widespread change in the north country.

Above all, the land and water are still there; so are the hardy and determined people. These priceless resources of the Northern Great Lakes Region are carried over from a vigorous past.

No area as rich in timberland and water as this midwestern northland can remain economically deficient in the heavily populated center of America. The same can be said of many other regions—Appalachia, for example—each of which has a vital place in the national economy and in service of the American people.

Resource action

The future of the Northern Great Lakes Region, like that of other States, lies in the cooperation and dedication of the local people in Resource Conservation and Development programs of broad regional scope and benefit.

The need for joint action was expressed by the governors of Wisconsin, Minnesota, and Michigan following the Land and People Conference at Duluth, which was called by Secretary Freeman in 1963 and addressed by President Kennedy. Since the conference, citizens' groups representing the three States have worked toward greater cooperation in developing the economy of the northern communities.

The tri-State region's 21 million acres of public forest and 24 million acres of private woodland; its 27,000 inland lakes with nearly 3 million acres of surface area; its 3 000 trout streams with more than 15,000 miles of fishable waters; its 23,000 farm ponds; its 2,000 miles of Great Lakes Shoreline; its 1¼ million deer and abundance of

Abundant fishing waters of the Northern Lake States offer quiet outdoor relaxation.

other wildlife—all combine to provide dramatic opportunities for recreational development, and for water supply, wildlife conservation, and economic progress.

Recreation and more

While the stress is on recreational enterprise, the overall theme is diversification—timber production and wood products manufacturing, industrial and municipal power production, and farming and grazing.

Vocational and retraining programs, for both youth and adults, are available in the region. Businessmen and chambers of commerce have organized industrial development funds to help promote new industry. Seventy-six of the 81 counties in the region are participating in the USDA Rural Areas Development effort.

Technical conservation assistance is being extended to nearly 12,000 nonfarm people in the Northern Great Lakes States, through local soil and water conservation districts which are reorienting their programs toward multiple-use resource development. They are partners with more than 146,000 rural cooperators. Their goal is to make every human skill and talent, every acre of land, every gallon of water count for the benefit of the region and the welfare of the people.

Federal assistance, through conservation districts and under various acts of Congress, has effectively pursued this objective as a matter of national interest.

The Water Resources Planning Act, the Economic Opportunity Act, the Public Works and Economic Development Act, and numerous other recent legislative accomplishments of the Congress and the Administration have greatly strengthened the Resource Conservation and Development effort.

Teamwork for success

The effectiveness of Federal participation has been enhanced by the broadening in recent years of the time-honored working relationship between the several States and the Federal Government, so as to include counties, municipalities, and other governmental units. Teamwork with nongovernmental organizations has added to the success of the combined effort.

The West Central Minnesota Resource Conservation and Development Project and the Pri-Ru-Ta RC&D Project in Wisconsin are outstanding examples of this productive local-State-Federal alliance for resource development on a regional basis.

These projects are designed to attack the twin problems of rural underdevelopment and urban overdevelopment. They contribute a sound counterweight to the forces which have generated the trend of country-to-town population movement. They offer hope that migration from our rural areas will give way to rural revival which will attract and retain vital manpower.

For lasting, broad-gaged national

Woodland improvement provides sustained income and better-looking land for Lake States landowners.

growth, we must achieve a balanced approach. We must acknowledge the interdependence of all Americans, and the importance of economic, cultural, and social development in much of what is now rural America, so as to accommodate increased—rather than lessened—numbers outside congested urban centers.

A rural-urban balance

The basic values of the urban and rural community are the same. The needs and aspirations of a people do not change at the corporate limits of a city, or between country folk and city folk.

Rural America requires the advantages of organized community life to enter the mainstream of American progress. There must be available the basic facilities—water, sewers, power, and telephones; adequate roads; schools; hospitals; and other community institutions; and opportunities for employment.

In our urban centers, it must be understood that the city park is as vital as commercial space; the tree-lined neighborhood street as essential as the expanse of freeway. The city that contains the advantages of nature found in the countryside becomes a more complete community.

We are obliged always, in our pursuit of a better way of life, to consider the total environment. Those who plan the use of our outdoor spaces need to understand this first of all.

Some areas of the Nation should be left entirely in their natural state. Such areas are found in the Northern Great Lakes Region, in Appalachia, and in many other parts of the country. These "wilderness" areas have an important place in the future of our country. Some wilderness must be preserved, so that a great natural heritage will not be overrun with what too commonly are considered civilizing influences.

Actually, what might otherwise be considered technical "progress" may eliminate priceless outdoor values which are irreplaceable. Statesmanship requires that we prevent that destruction if we can.

Beauty of improved land and water draws America's families to Lake States for pleasant recreation.

We need awareness

Good conservation is a matter of judgment. Sound laws are only the first step in protecting our resources against the exercise of bad judgment; we must have broad public appreciation of the importance of using our resources wisely.

Improvements in our recent past do provide proof of a new national interest in protecting and enhancing our natural environment by increased cooperation.

Looking back to my 16 years in the Senate, it is deeply gratifying to see how the "seeds" of laws and administration for strengthened, modern conservation have flourished in the "soil" of national understanding.

"A more perfect union" is ahead—the union of people and their land and water resources, the voluntary consensus of private groups, cooperating localities, States, regional groupings, and Federal agencies.

The destiny of town and countryside is linked in a common cause—a fuller life, a still more fruitful, more satisfying future for all our people. ♦

Conservation Sketches Ready for Teachers

Conservation education materials for the elementary grades are now available to teachers in the form of original sketches prepared by the Soil Conservation Service for use with overhead projectors. A total of 115 illustrations divided into 5 packets of 23 line drawings make up the complete set.

Now ready for distribution are three packets, including "The Land That Supports Us," dealing with broad concepts in resource use and conservation; "Our Soil Resources," emphasizing soil conservation principles and practices; and "Our Water Resources," depicting water-resource management practices. Still to be completed for distribution in the spring are "'Our Plant Resources" and "Our Animal Resources." The series is being prepared for sale to schools.

Original drawing to illustrate the various conservation concepts were done by Felix Summers, SCS technical illustrator, with the assistance of subject matter and information specialists. The sketches were then sent to the Minnesota Mining and Manufacturing Company, where the company's technical staff completed the packets. ♦

Plans for More People

Towns in Connecticut map future resource use within framework of regional goals

By Richard B. Erickson and Robert E. Laramy, Jr.
Executive Director, Southeastern Connecticut Regional Planning Agency, Norwich, Conn., and Assistant State Conservationist, SCS, Storrs, Conn.

CAN A STATE expecting a population of more than 1,000 persons for every square mile provide a high-quality living environment for its people?

Resource planners throughout Connecticut are facing this question today and devising new approaches to meet the problems it will pose.

Connecticut is the fourth most densely populated State in the Nation, with an average population density of more than 500 persons per square mile. By the end of the century, the population is expected to double.

To prepare for the problems ahead, Connecticut has evolved a unique planning structure that provides conservation districts and the Soil Conservation Service opportunity to participate at regional as well as local levels.

Statewide planning is coordinated through the Connecticut Interregional Planning Program—a joint effort of the Connecticut Development Commission and the Departments of Agriculture and Natural Resources, Highways, and Finance.

Regional planning is not imposed by the State Government but is initiated by the communities in 15 planning regions defined by the Connecticut Development Commission after careful study of physical, social, and economic factors. There is no county government in Connecticut.

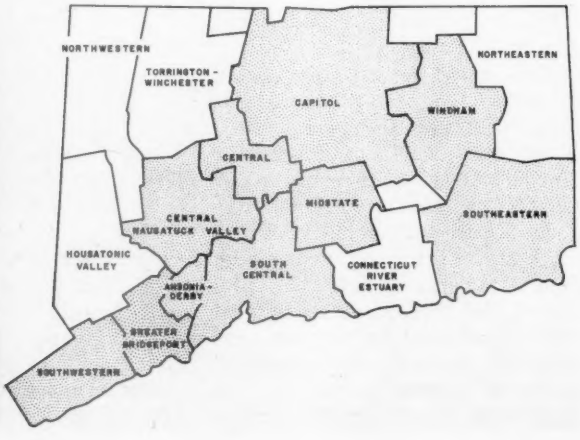
Since 1958, when the first regional planning agency was created, the citizens in 10 regions have voted to form agencies. These now serve 90 percent of the State's population. Each agency is managed by representatives appointed or elected by its member municipalities. Being midway between the local and State levels, the regional agencies are well placed to serve as coordinators of the overall program.

At the local level, municipal and town planning and conservation commissions define local needs and plan natural resource development. The SCS works through soil and water conservation districts to help integrate soil and water conservation into the planning process.

Information provided by SCS on resources helps to answer the question: "How can our limited amounts of land and water best be used to serve the needs of an expanding population?"

Information about the soils and their potentials for different uses was supplied by the SCS through soil conservation districts. Soil maps and interpretations were used to determine the location and extent of prime agricultural land, potential open space and recreation sites, future residential and industrial areas, and for identifying areas that would present problems in onsite sewage disposal, flooding, hillside slippage, and the like. These data are used in analyzing present land use problems and projecting potential land use to meet future population needs.

The land use plan of the town of North Stonington is the subject of study by children in the public schools (left). This town is in the southeastern planning region, 1 of 10 already organized and operating (shaded on map at right). Five others have been defined to complete coverage of the State of Connecticut.



Through text and maps, the regional plan indicates the type of environment the people are striving for and points to ways of achieving the desired objectives. Basically, the plan seeks a sound pattern of land use that minimizes conflicts within communities or between different activities and that provides adequate facilities, such as highways, parks, water supply, and sewage disposal systems.

Within this broad framework, a community can prepare its own plan with understanding of how it fits into the larger region.

Specific projects, whether concerned with urban development or natural resources, can be more closely focused on the area's needs.

For instance, current planning for a watershed-protection project on the flood-prone Yantic River is being closely related to land use and resource proposals of the southeastern regional plan.

On a broader scale, regional planning has led to an application for a Resource Conservation and Development Project for the State's three eastern planning regions, about 900,000 acres.

Activities in North Stonington, 1 of the 17 communities in the Southeastern Region, illustrate the role of SCS and the districts.

Within the framework of the regional plan, the North Stonington Town Planning Commission is preparing its own comprehensive plan for urban growth and natural resource development, with the help of a private consultant financed by a Federal urban planning assistance grant. SCS provides soils information and other technical assistance through the New London County Soil and Water Conservation District.

Based on five main soil and landscape patterns, the town area was divided into units meaningful in land use and natural resource planning. The delineations are shown on a transparent overlay for use with various planning maps.

A system of stream belts, totaling about 6,500 acres, was delineated on the basis of the watercourses, adjacent wet lands, soils subject to overflow, adjoining areas with severe limitations for urban uses, areas of high open space potential, water-resource development sites, and areas with pollution hazard if developed for urban use. Sixteen water-impoundment sites of regional concern were identified.

About 16 percent of North Stonington consists of very poorly drained soils and marshes. These wet lands present serious limitations for urban development but have many conservation and open space values. As part of the resource planning, the location and acreage of the significant wet lands were shown and an evaluation made of their value and potential for wildlife habitat.

Plans for multiple use of the woodlands that make up three-fourths of the area are considered in North Stonington's plan. Other conservation needs considered include farmland conservation, watershed protection, a system of hiking and riding trails, historic and scenic sites, and public recreation sites. The town conservation commission has embarked on a program to promote conservation among landowners who control most of the area.

Beginning with a nucleus of 10 cooperators in 1965, the conservation district increased the number of its cooperators to 75 by the fall of 1966. Both farm and nonfarm properties are involved, and the conservation plans cover cropland, grassland, woodland, wildlife, and recreational land uses.

In Connecticut, broad plans for the State, the regions, and the towns provide the framework for integrated resource development and use. However, the individual property is still considered the basic unit on which conservation must be done. ♦

A scenic overlook in North Stonington (left) is to be preserved as part of the town's conservation program. Spaulding Pond dam (right) built as part of a watershed project, provides recreation as well as protection from floods.

Residents have their say too . . .

Township Guides Its Future Through Sound Resource Planning

By Neville Mapham and Charles R. Barnett, Jr.
Chairman, Cato Planning Commission, Cato, N. Y.; and Work Unit Conservationist, SCS, Auburn, N. Y.

HOW YOU GO ABOUT getting people's confidence is just as important to a planning commission as how you go about planning.

In planning the future of Cato Township, N. Y., leaders knew that the key to a successful plan is overcoming people's fear that planning and zoning would take away some of their freedom by limiting the use of their property. They took special steps to overcome these fears.

Cato, population 1,800, is gradually becoming an outer suburb of the growing city of Syracuse. Agriculture still dominates community activities, but in the last 10 years the town population has grown 20 percent and is expected to double by 1975.

Town leaders were wondering "how do we want our town to grow?" and "how will it compare with neighboring communities in 20 years?" They wanted to avoid the "growing pains" typical of most urbanizing areas by assuring sound development that would enhance the town's attractive atmosphere while meeting increased resource use.

Clarence Blumer, a director of the Cayuga County Soil and Water Conservation District, broke the news in January 1964 that—as supervisor of Cato Township—he had appointed Neville Mapham to be chairman of the Cato Town Planning Commission.

Mapham, a local physicist, is also a part-time conservation farmer. One of Mapham's first acts was to ask Charles Barnett of the Soil Conservation Service what help was available from SCS and other agencies through the conservation district.

Since Cato was the first township in the Cayuga District to have its soil map completed, the commission quickly made a decision to base all land use planning on this soil survey information. Next, the members determined that they would not hire professional planners at this time.

An engineer, a physicist, a contractor-farmer, a farmer's wife, and a schoolteacher made up the commission that would prepare the actual plan.

These five local people, all novices in town planning, found a simple formula which almost any community can use: Overcome the public's fear of community resource planning through the skillful use of a public information program. The commission's objective was to have a sustained educational program over a period of 2 years which would reach every resident.

Information program

An early news release pointed out spoiled beauty spots and the loss of wildlife, as well as congested highways and tax problems. Commission newsletters, mailed to all town residences, increased interest in town planning. They described good sanitation, profitable employment for young people, and a town "where kids can get a feel for the country." In this way the commission showed its interest in all of the community's problems.

Later news releases reported that the commission had begun its studies of soils, suitable use of land, flooding hazards, commerce, and industry. Ideas from the people of Cato, their likes and dislikes, were emphasized. The commission would be helped, the news releases pointed out, by the County Health Department, Federal and State agencies, town government, and "the people of Cato themselves."

During the winter of 1964-65, the SCS became actively involved in helping Cato with the natural resource phases of community planning. The planning commission bought copies of soil survey field sheets from SCS and put them to many uses. Barnett helped the commission develop three large maps showing soil limitations or suitabilities for homesites, agriculture, roads, and septic tank filter fields.

SCS Soil Scientist Frank Hutton had prepared the soil survey for Cato. His detailed knowledge of all the land under study helped the commission identify groups of soils best suited to agriculture and other uses. He also provided a description of the soils, geology, and land formations in the area.

Soil maps useful

The town superintendent of highways, Donald O'Neill, found that he could use the soil map for locating gravel deposits for needed road work. The location of a proposed road was studied by sketching it on a photo copy of the soil survey map, making it easy to learn about soil-bearing strength, drainage, and other problems.

The map was used to study trends in land use. The survey data had been recorded on aerial photographs made in 1938. Comparing these with more recent photos provided opportunities to study old and more recent land use patterns. The growth in the number of summer residences was easy to spot. It was also clear that many cottages were being developed on soils that are difficult to drain.

The most challenging land use problem was to try to reserve suitable farmland for agriculture. New homes were being built on some of the best agricultural land. Still more good farmland was idle and not for sale at prices farmers could afford because of land speculation. The commission knew that most farms in the area had to expand to remain competitive. Cato farms gross more than $1 million annually, and it was felt that this income had to be safeguarded.

With SCS guidance the commission assembled a complete soil map mosaic of Cato, each mapping unit being colored according to its row-cropping suitability. Woodlands, hardpan soils, and steep or stony areas were heavily discounted.

Similarly, the commission chose extensive areas for residential and recreational development. Here the soil map showed some potential for ponds and marshes, woodland and wildlife cover, as well as soil limitations for homesites and roads.

Members of the commission held many small, informal discussions with the public on important local issues. They considered such points as community water supply, community drainage needs, sewage treatment, beautification, and traffic problems. There was much homework for commission members so they could answer questions.

Finally, the people's wishes had been heard. The town resources had been cataloged. Meetings with all sorts of groups had been held, and even a planning newsletter had been mailed to all residents. The next step was to record the decisions.

The plan is a masterpiece of simplicity. It features a large aerial photographic map of the community. Land use zones on the map are variously colored. Roads are labeled, lakes identified. In the wide margins and on the back of this 24- by 36-inch sheet the planning commission describes its conclusions.

Neville Mapham shows a group of Cato neighbors how a soil map aids in choosing land use.

There are five land use districts: Residential, agricultural, recreational, industrial, and disposal. Regulations for the wise use of each land use district are explained. The steps taken to prepare the plan are outlined. Needed "subdivision" and "land use" ordinances are spelled out in simple terms.

The subdivision ordinance is to be a "tool to make the master plan work." It will protect the public from exploitation by some builders of inferior houses "who collect their money and vanish" leaving town residents to fix roads, sewers, and drainage. Similarly, an ordinance is proposed to prevent substandard homes, small lots, and inadequate parking.

Seen, studied, approved

This written "Plan for Cato" was mailed to every taxpayer, every family in the community. Prominent on the cover page was the suggestion to "study this plan, talk it over . . . and let one of the Cato Planning Board members know how you think the plan can be improved."

The final measure of success came during the public hearings when the plan and proposed regulations were officially presented. When the commission members realized there was little or no misunderstanding or opposition, they knew that their plan of leadership and action had been successful. Shortly afterward the "Plan for Cato" was adopted by the local governing body representing the local people.

Using the plan, a builder can find best sites for new housing; a farmer knows where to buy new land with reasonable tax rates; an outside firm can confidently settle in an area set aside for industry; and the town board can decide more easily where new roads will be needed.

Cato Township now looks confidently to the future. ♦

For one field or several counties . . .

Follow the Basic Steps to Good Resource Planning

By Minott Silliman, Jr.
Resource Planning Division, SCS, Washington, D. C.

IS YOUR COMMUNITY ready to double in size in the next 33 years?

Where will twice as many residences, schools, highways, airports, factories, and other facilities be located? Where will you get—and store—twice the amount of domestic water, energy, and other vital resources? These needs will soar because our Nation's population is expected to double by the year 2000.

There will be as much new construction in the next 33 years as there has been since Columbus reached the New World in 1492. The current demand is for more than 1 million new homes in America each year.

Population is shifting, too—away from the farm, yet back to the country for open space and recreation. These and many other changing needs are creating an awareness that Americans must plan carefully for the orderly use, development, and conservation of human and natural resources. The question is no longer "why plan?" but rather "how do we plan?" and "what do we develop?"

The Soil Conservation Service—with 31 years of experience in helping landowners plan proper land use and treatment—has an active role in community planning and development.

After all, the planning principles and steps are exactly the same whether the objective is to help heal a hillside gully . . . develop a farm or ranch conservation plan . . . solve a group water-management problem . . . plan a watershed project . . . or help design effective use and development of an entire community's land, water, and related resources.

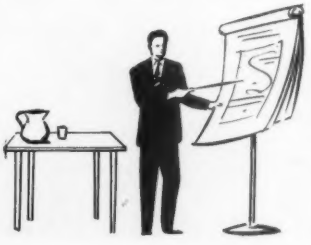
Here are 10 basic steps that SCS and other agencies and groups use every day in effective resource planning and development:

1. Let the people know

There is no substitute for an informed public. It is wasted effort to plan and then attempt to sell the solution to a problem people do not know or believe they have. These are plans that just collect dust on a shelf.

A good information program—set up early and carried throughout the planning process—is essential. Through it, people are made aware of the resource needs or potentials. Then they are more likely to be active in supporting or helping plan for the wise use and care of their resources.

The information program must reflect the impact of the problem on the entire community or region and not just the field or spot involved.



2. A request for help

When people know and become concerned about a problem or opportunity, they decide to do something about it. An individual, or a representative of a group or area, requests help from SCS through the local conservation district.

The cooperator's request may not reflect all conservation needs and opportunities, but it paves the way for developing mutual knowledge and confidence. It gets things started.

"Cooperator" in this article means not only individual land owners and operators, but also community groups, towns, villages, counties, groups of counties, areas or multi-State regions, and others. The cooperating area may be represented by elected officials or by leaders chosen to carry out resource-development work.

A resolution by a town board or planning commission followed by a letter to the district from the clerk or secretary is a common type of community request for help.

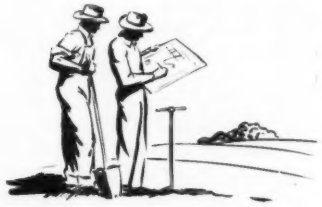
3. What the cooperator wants

What are the cooperator's objectives? At first, interests or desires may not be very broad or inclusive. But effective resource planning must begin with people where they are and not where we wish they were. The challenge is to help them increase their knowledge, stretch their imagination, and broaden their sights for all their resources.

We start talking with a landowner about his immediate problem, and soon we are discussing his entire operating unit plus the

watershed, irrigation channel, and other resources he has in common with neighbors. Although the first request from a community may be to help locate suitable soils for a landfill garbage dump, the conversation leads to such items as future needs for water impoundments, good potential recreation areas, or the need to keep new houses or shopping centers out of a flood plain.

Whatever the size of the planning area, the more people in it who participate in setting resource needs, goals, and objectives the better. People who help decide on objectives are more likely to be interested in carrying them out.



4. Make an inventory

To work toward meeting the goals, conceived in step 3, many resource facts are needed. SCS can help obtain certain basic data such as soil surveys or watershed studies. Natural resource data from other agencies or groups also may be needed as a basis for long-range, multiple-use decisions.

How detailed and immediate the inventory must be depends upon the needs and aims of the cooperator—you don't dump the whole load of hay when only one cow comes up to feed.

For a concrete structure on a farm or watershed, careful onsite investigation with deep borings may be needed. But a general soil map may suffice for making broad land use decisions in a county or a multicounty area.

One of the first inventories should be to determine what facts already are available, such as older soil surveys, and then determine what further resource information is needed. SCS can help here. At this point, planners must decide how to obtain any needed surveys or studies—and set up a schedule, manpower, and funds to do them.

Inventories are not a plan. When completed, they become a basis for the total plan.

5. Analyze, interpret, inform

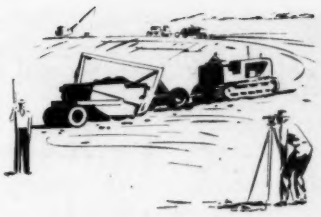
In this step the inventory comes alive. We find out what the resource data mean in terms of both today's and tomorrow's needs and potentials. And analysis and interpretation call for study and thinking. The thinker and computer are no longer regarded as "ivory tower;" they are indispensable in finding out how two of us are going to exist on the same space as one in 33 years.

The inventory findings about soil and water limitations and potentials must then be communicated to the cooperator in terms he can grasp and relate to his objectives. This frequently means colored maps, pictures, and drawings, publications, and even field trips. Soil interpretations, water-impoundment sites, potential recreation areas, or good and bad building sites which are commonplace to technicians will never become real to a citizen until he obtains a visual picture of them.

One planning commission official remarked that a soil survey map looked like a picture of earthworm tracks in the mud until it was colored to show limitations of various soil types for septic tank filter systems.

6. Consider alternatives

How can resources best be developed to meet immediate and long-range goals and potentials of the individual, the group, and the larger community? How can the physical, social, economic, environmental, health, and welfare needs of people best be met?



These questions can be answered only as the cooperator and the technicians work diligently together and constantly reflect back on the objectives.

The technician can present facts, mention ideas, and make suggestions. But the solutions or decisions people like best and usually follow best are the ones they are just certain they thought of or helped develop.

A conservation plan made in the office and then "sold" to the landowner is seldom as effective as one developed around the kitchen table where there is exchange of ideas, feedback, and trial and error. The same basic principle applies when a neighborhood group or a community is considering the future of its area.

Here, as in step 3, we can help people stretch their imagination and broaden their objectives. The alternatives must consider the multiple-use potentials for the resources, and compatibility of uses. Class I farmland seldom reverts back to producing food once it is covered with concrete; and faster runoff brings changes in the watershed.

What about beauty of the landscape and the effect of different alternatives on the physical and mental well-being of people? Pleasure driving in the countryside is the most popular form of recreation.

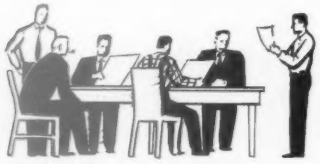
This step must involve the people affected by the decisions, whether the planning area is 1 acre or a million. In group or community planning, we must help and encourage the decision-makers to explain the alternatives and potentials to their constituents.

7. The cooperator decides

This obvious step becomes less tangible as the size of the area or number of persons involved increases. But firm decisions on resource use can be made by large areas or groups through their elected representatives. In any case, the cooperator must make the decision.

The firmness of a planning decision—on one field or three States—depends to a large extent on how thoroughly and effectively steps 1 through 6 have been carried out.

An affirmative vote at a town, community, or watershed association meeting may be the only form of decision possible to adopt a certain course of action for handling the resources. A resolution by the city, village, or county governing body can establish a decision to proceed on certain types or phases of land use or treatment. Allocation of money by an individual or group for a specific conservation project is a firm decision.



8. Record the decision

Decisions are easier to carry out if they are set down on paper. In what form the planning decisions are recorded varies with the situation. It may be a farm conservation plan. It may be the written working arrangement between an individual, group, town, county area, or region and the local conservation district and cooperating agencies.

In any case, the record expresses the intent of the plan and sets forth any new policies or priorities.

9. Putting the plan to work

This step is the most popular part of the planning process; it is the reason for the planning process. As Israel Stollman said in an article in the 1963 *Yearbook of Agriculture*, "It is more popular than making the plans themselves: Therefore, we are often implementing plans that do not exist."

Often, especially on smaller jobs, progress is easy to spot. New trees, greener grasslands, lined irrigation ditches, or land use changes are visual proof that a farm or ranch conservation plan is being applied.

Implementation of a plan by a larger group takes longer and more diverse actions which are also harder to pinpoint or detect. This fact causes some to feel that the plan is just gathering dust—which, of course, can happen if it is not the people's plan.

Just as a conservation plan for a farm or ranch is usually implemented by several individual projects, natural resource plans for larger areas are implemented through individual actions—a developer changes the location of his proposed subdivision to take advantage of more suitable soils or a proposed water impoundment . . . a county zoning board bases its zoning map on the soil survey . . . or five conservation districts in a multicounty planning area develop a joint program for the whole area.

Thus, broad community plans are put to work slowly but surely—if properly developed—by levels or units of authority below them.

10. Evaluate and update

Experience is a great teacher in land use and treatment. As needs and demands change, as new methods and technology crop up, individuals and groups need to take a fresh look at their objectives and update their plans.

This means going back through each planning step to achieve best results and best use of resources.

In community resources and development, these principles should be kept constantly in mind:

- Planning is a continuing process. It is a decision-making process and not a forecasting service. Neither is it zoning—it should precede zoning.
- Planning must be *with* people and not *for them*. Public discussions must be included from the very beginning.
- The same planning steps are needed whether dealing with a field, farm, neighborhood, town, county, State, or region.
- People can and will think broadly and are anxious to work together for the wise use of soil, water, and related resources. Local people and their leaders are the key to success.
- Planning must involve the physical, social, economic, political, and environmental welfare of all segments of the community—both rural and urban—if it is to be accepted and carried out.
- Seldom does one agency or group have all the answers or help needed. Teamwork, both public and private, is vital.
- Planning is not an easy academic exercise. It involves time, money, and hard work—and reverses can be expected. But the rewards from continued development of human and physical resources are well worth the trouble.

Surely a nation that plans to put a man on the moon can make and carry out plans to improve its resources for the welfare of all its citizens—especially that extra person who will be standing beside each of us in the next few years. ♦

Recreation developments, such as this pond, give a new and pleasant look to formerly unprofitable farmland in the Copper Country.

Copper Country Framework Program Is Basis for Long-Range Planning

By Martin E. Kangas
Work Unit Conservationist, SCS, Ontonagon, Mich.

A NEW "framework program" for the counties of Ontonagon, Houghton, and Baraga brings a new kind of optimism to the residents of Michigan's Copper Country, an area that has been subjected to the planning process for years.

The program is set forth in a 50-page booklet of facts, figures, and ideas for raising the economic level of this scenic Northland.

A two-way key

The sponsors hope that the framework program will be a key that turns both ways—a way out of the economic problems and disadvantages for Copper Country residents—and a way into wholesome recreation and enjoyment of natural beauty for thousands of urban-based Americans.

The Copper Country, which gets its name from the once-flourishing mining industry, is known to planners as a "broad program area." This means it is a large land area with similar topography, natural resources, and culture that makes a convenient unit for planning. Such areas are now scattered throughout the Northern Great Lakes Region.

Copper Country folks have already aroused notable optimism through the imagination and cooperation that went into their resource study. Now they're ready to work on the details of making realities of their broad framework program of resource conservation and development.

Change is in the offing, and leaders know they must be ready to adjust to new land uses.

Opportunities turned up by detailed analysis of the area have bolstered the confidence of both public and private developers.

What was the spark that lit the fires of action in the Copper Country? It's a long story, as any of the citizens of that once remote area can tell you. It involves something of the history of the region —the tragic disruption of community life by the continuing closedown of copper mines and deep iron ore mines, the depressed agricultural economy, the low net income from woods work.

Land and people

The spark was fanned into flame at a collective hearing known as the Land and People Conference, held at Duluth, Minn., in September 1963. There, 1,200 community leaders from 81 counties of the Northern Great Lakes area of Minnesota, Wisconsin, and Michigan aired their mutual problems. And collectively they decided to do something about them.

Governors from the three States pledged their support to economic expansion through resource development. Back home again, Copper Country leaders plunged into the planning process with energy and enthusiasm.

The Soil Conservation Service assigned a three-man staff to aid the local soil conservationists in their work with conservation district directors.

Assistance was also provided by the Michigan State University Cooperative Extension Service, the U. S. Forest Service, Michigan Department of Conservation, plus many other agencies, groups, and individuals. Land owners and operators were called in to express their opinions and attitudes toward a more intensive development of the area's resources.

The directors adopted a three-step approach in formulating a framework program of develop-

ment for the Michigan Copper Country Broad Program Area, as it was officially named.

First, an inventory was made of the area's natural resources. This included a study of land use by agriculture, forestry, and recreation. Landownership patterns were classified by public ownership, large private (more than 5,000 acres), and small private ownership.

Second, an evaluation of resource-development possibilities was made. Land-resource-area maps and information provided by SCS were used extensively.

For example, the heavy clay soils in the southern section of the Broad Program Area indicate grassland use and are well suited to a range-type beef enterprise. The sandy loam soils along the shore of Lake Superior are good for potatoes, truck crops, and strawberries. Extensive forested areas offer possibilities for the increased development of primitive-type recreation, such as hunting, fishing, camping, and hiking. They also provide an opportunity for improved woodland management. More than 3,000 lakes with 38,000 acres of surface water provide many sites for water-based sports and recreation.

The economic potential

The third step was an estimate of the economic potential of resource development. Population distribution, highway location, traffic patterns, transportation facilities, and present developments were all considered.

For this initial evaluation, the district directors selected 30 enterprises from a longer list of possibilities in the private sector of land uses—8 in agriculture, 13 in recreation, and 9 in forestry.

Certain enterprises were recommended for immediate action. The directors are incorporating these development plans into their individual district conservation programs.

Thus, dairy, beef, potato, and strawberry production will be emphasized first in the agriculture field. Campgrounds, ski areas, and vacation farms will be given priority in recreation development. Woodland management, marketing, and harvesting efficiency were placed on the priority list in forestry.

Broad area planning has shown that many enterprises have comparative advantages in the Copper Country that were not readily apparent at the outset.

The momentum created by the planning process has produced a renewed and revitalized enthusiasm for resource development among conservation directors and cooperators alike.

A logical outgrowth of this new planning process has been an objective, up-to-date look at the long-range goals and programs of the area and of the individual districts.

This is only the beginning. Additional development is sure to come.

Planning is a continuing process and broad area planning will continue. But added income-producing enterprises are assured today because of the work initiated by district directors in northern Michigan's Copper Country. ♦

Chairmen of boards of directors of three soil conservation districts discuss with SCS conservationists possible economic uses of idle farmland such as that shown below. In the picture above, from left to right are: Fred Kekko, work unit conservationist, Houghton SCD; Kenneth McManus, assistant State conservationist, East Lansing, Mich.; Martin Kangas, work unit conservationist, Ontonagan; Robert Williams, SCS work unit conservationist, Baraga SCD; Palmer Skalland, State soil conservationist from Michigan; Joseph Sternad, chairman of Ontonagon SCD; Toivo Lahti, chairman, Houghton SCD; and Robert Goudell, chairman, Baraga SCD.

Beauty a Product of Conservation

McKinley Oldham (right) and Ed Sanders, SCS work unit conservationist, study the accomplishments on Oldham's farm and plan for the future.

IN keeping with the national objective to improve the natural beauty of the countryside, McKinley Oldham takes pride in the maintenance of conservation practices and in the appearance of his property on his 66-acre farm in Clark County, Ky.

Thousands of people annually view his roadside beautification as they travel Interstate 64 about 8 miles east of Winchester.

When Oldham moved to the farm after retiring from the Post Office Department in Chicago, he soon found he needed assistance on many problems with his farming program.

Through the Clark County Soil Conservation District, SCS helped Oldham develop a conservation plan in 1958. Using a land capability map, he selected 3 acres of the best ridge land for a tobacco rotation, retired 4 acres of steep land from corn production, and planned all other land for pasture, hay, and woodland.

In 7 years, he has established 50 acres in Kentucky 31 fescue, red clover, and Korean lespedeza for his beef cattle; eliminated unsightly shrubs; and keeps steep hillsides in grass and his pastures mowed.

During the summer of 1965, he brought his conservation plan up to date and built a multipurpose farm pond for stock water, irrigation, and recreation.

A dedicated conservationist, Mr. Oldham believes the land he owns has been given to him to administer as a sacred trust and that he has a moral responsibility to improve it for future generations.—EDWARD L. SANDERS, *Work Unit Conservationist, SCS, Winchester, Ky.* ♦

Water Reserve Low in Western States

With soils generally drier than usual and slightly less than average carryover of stored water in reservoirs, Western States need better than average snowfall this winter to assure an average water supply for the 1967 irrigation season.

The 1966 fall water-supply summary issued by the Soil Conservation Service reported that irrigation needs in most of the West were reasonably well supplied in 1965. Streamflow was deficient, however, in Oregon, Wyoming, Nevada, Utah, and Colorado.

Any serious deficiency in winter snowfall will result in water shortages in 1967 in parts of Colorado, Utah, Wyoming, Idaho, and eastern Oregon. ♦

SCDs Give NYC Boys on-the-job Training

By participating in the work-study program authorized by the Economic Opportunity Act, West Virginia soil conservation districts are providing on-the-job experience to 14 college students.

The districts have entered into agreements with West Virginia University to furnish jobs for students in need of employment to continue their education. Under this program, the districts select work locations and provide a part of each student's salary.

The selected students major in agriculture, civil engineering, forestry, agricultural engineering, and biology and, under the supervision of SCS technicians, perform work similar to that of soil conservation aids and engineering aids.

In addition to job training, the students are given the opportunity to learn about careers in soil and water conservation and the qualifications needed for such positions. ♦

Realtor Honored for Use of Soil Surveys

A real estate man who pioneered the use of soils information in urban land development was named 1966 "Realtor of the Year" by the Northern Virginia Board of Realtors.

Verlin W. Smith of McLean, Va., led a crusade several years ago for a soil survey of Fairfax County and pioneered land use planning based on soils information.

He contributed an article, "A Realtor's Views About Soil Surveys," to the December 1960 issue of *Soil Conservation*, in which he stated, "I am convinced that up-to-date soil surveys furnish information that is fully as important to rurban and suburban developments as it is to farmers."

Smith now is instructor of a course in land usage in the real estate board's program of continuing education.

Earlier last year, Smith was also selected as "Man of the Year" by the Fairfax County Chamber of Commerce. ♦

Soil Conservation in the Changing Landscape

Summary of Activities of the Soil Conservation Service 1966

SOCIAL and economic goals claimed the attention of the Soil Conservation Service in 1966 to a greater extent than ever before.

The Service provided basic resource data and planning assistance for a wide range of community and regional activities aimed at stimulating economic development, increasing job opportunities for disadvantaged people, guiding land use changes in the path of urban development, improving the quality of the rural and suburban environment, increasing outdoor recreation facilities, and similar efforts to provide a better life for people in the changing rural landscape.

The broadening services were in addition to continuing assistance to individual land owners and neighborhood groups in the solution of soil and water conservation problems on their own properties.

SCS's traditional technical assistance to local conservation districts, to sponsors of small watershed projects, to participants in the Department's Agricultural Conservation Program and Great Plains Conservation Program, and other organized conservation efforts continued on about the same level as the year before.

Involvement of SCS in the Nation's human welfare efforts indicates no change in the function of the agency. It derives from the fact that economic growth depends on the sound development and correct use of natural resources, and that healthful and pleasant surroundings for people to live, work, and play in result from the way those same resources are protected and cared for.

The availability in the Soil Conservation Service of basic information about soil and water resources and the technology of using, conserving, and managing them, and the plant and animal life dependent on them, leads naturally to the participation of SCS in community development and improvement programs throughout the country.

Broad area planning

The Soil Conservation Service assisted, in one way or another, with broad area resource-planning activities in every State in 1966.

These varied in scope from neighborhood groups of landowners with water problems that crossed property lines to agencies concerned with major river basins or regions including parts of several States. They included municipal and county land use planning bodies responsible for guiding urban expansion, Technical Action Panels and Rural Area Development committees of counties and States, Resource Development and Conservation projects, and other formal and informal planning groups.

Assistance in most instances included providing basic soils information for the area involved. Ordinarily, this included a detailed soil survey or a special reconnaissance survey, often made in cooperation with, and partially financed by, the interested local government.

In addition to supplying maps and descriptive information, SCS soil scientists and conservationists helped interpret the basic data in terms of the suitability of the soils for different uses, as for agriculture, building construction, highways, residential sewage disposal fields, recreation, wildlife habitat, and other alternatives that need to be considered in general land use plans for an area. They also provided information about erosion and runoff problems likely to be encountered and methods for dealing with them in both rural and urban areas.

In fiscal 1966, SCS provided basic data for use in comprehensive planning on more than 21 million acres, a six-fold increase over 1965. Nearly ⅛ million consultive services to such groups and to individual land developers amounted to a 19 percent increase in this kind of activity over the previous year.

Meantime, through soil conservation districts and other local arrangements, SCS helped prepare plans for 3,214 group projects for the establishment of conservation measures, an increase of 8 percent over the previous year. The plans involved 62 percent more (26,363) land owners and 55 percent more land area (2,177,077 acres) than in 1965.

That 1966 continued a trend of increasing service to groups is shown by the following summary for the past 5 years:

	Group plans prepared		
Year	*Plans*	*Landowners*	*Acres*
1962	2,460	19,013	1,319,918
1963	2,473	15,075	1,141,579
1964	2,832	17,234	2,278,602
1965	2,965	16,309	1,403,000
1966	3,214	26,363	2,177,077

The rural-urban transition

The Soil Conservation Service was increasingly engaged with soil and water problems arising out of the profound changes in land use

occurring on the edges of expanding urban areas.

Many soil conservation districts, originally organized in strictly rural territory, today find their farmer cooperators being replaced by land developers, industries, and urban residents with entirely different intentions regarding the use of the land.

District governing bodies, and the conservation agencies assisting them, are faced with a wide spectrum of completely new problems in these rural-urban transition zones.

In these areas, the Soil Conservation Service is providing specialized information and technical services in soil and water conservation on land going into nonagricultural uses. Such work accounts for a large part of the increase in consultive services mentioned previously.

The Congress recently recognized the Department of Agriculture's responsibility to provide guidance in land use changes and assistance with soil and water problems in areas of urban development by enacting Public Law 89–560 providing explicit authority to make soil surveys in such areas as well as on agricultural land.

Under this act, SCS will continue to provide leadership for the National Cooperative Soil Survey, including rural-urban transition zones in survey areas under appropriate cooperative arrangements with local agents.

RC&D projects

The Soil Conservation Service provided planning assistance to 10 new Resource Conservation and Development projects authorized for Federal assistance in fiscal 1966.

Before the end of the year, the sponsors of 3 of the projects had completed their plans, and the projects were authorized by the Secretary of Agriculture for assistance in operations. The first 10 pilot projects had been planned and authorized for USDA assistance in fiscal 1965.

The multicounty RC&D projects are designed to help local people overcome economic decline in rural areas by developing the local economy through resource use and conservation.

Project sponsors assemble an inventory of the natural resources and plan measures for their utilization in the local economy, with USDA and other assistance under the leadership of a project coordinator assigned by SCS.

The sponsors—including soil and water conservation districts, county governing boards, municipal governments, conservancy districts, and similar bodies—coordinate available assistance from Federal, State, and private sources to carry out project plans.

Already, the older projects are moving into construction phases of the work. By the end of fiscal 1966, sponsors had activated more than 600 project measures.

These have the effect of broadening the programs of soil and water conservation districts, accelerating small watershed projects, creating better rural facilities, helping eliminate the cause of poverty, and making rural America a better place to live.

Appalachian development

The SCS provided added technical assistance, over and above regular programs, for soil and water resource development under the Appalachian Regional Development Act to 12,982 people in fiscal 1966. Of these, 3,160 became new soil conservation district cooperators.

SCS helped 3,553 individual cooperators prepare complete soil and water conservation plans and 5,330 landowners develop 67 group conservation plans under the Appalachian Program.

During the year, 13 new watersheds were authorized for planning and 15 others approved for installation of land treatment and structural measures in the Appalachian region. This brings the total of operating watershed projects in Appalachia to 83, in addition to 22 that have been completed, representing a total Federal cost of about $106 million.

These projects contribute to economic development through positive additions to water resources and economic activity, as well as through avoidance of damages from floods and sedimentation.

Great Plains conservation

In the Great Plains Conservation Program, 3,783 new contracts were signed covering complete conservation plans for 6,069,430 acres. Work was completed and contracts terminated on 1,831 farms totaling 2,669,885 acres.

In its ninth year of operation, the program has 23,772 contracts covering 45,210,250 acres. In this area of uncertain rainfall and easily erodible soils, the plans provide for conversion of 22 percent of the cropland to more suitable uses, mainly permanent grass.

Participants established new permanent vegetative cover on 189,003 acres and seeded 135,612 acres of depleted range with Government cost-sharing under the program. They also controlled competitive shrubs on 435,216 acres of rangeland and built 6,192 miles of terraces on cropland.

The total of cost-shares paid for establishing conservation measures in fiscal 1966 was slightly more than $10 million.

Watershed protection

Thirty-seven watershed protection and flood prevention projects were completed in fiscal 1966. Ninety-four additional projects were approved for operations, and 100 others were approved for Federal assistance in planning.

By the end of fiscal 1966, 12 years after enactment of Public Law 566, the small watershed program had grown to include 729 projects totaling 41.5 million acres

Summary of Progress, Fiscal Year 1966

Total reportable progress in soil and water conservation programs assisted by the Soil Conservation Service

Progress items	Fiscal year 1966	Cumulative to June 30, 1966
Individual Conservation Plans and Related Services		
District cooperators .....No.	115,419	2,080,231
District cooperators .....acres	40,599,514	685,513,144
Cooperators canceled .....No.	65,224	—
Cooperators canceled ....acres	21,023,430	—
Landowners assisted .....No.	1,167,186	—
Services provided .....No.	3,386,471	—
Owners applying practices .No.	744,274	—
Basic plans prepared:		
Farm .....No.	91,248	1,529,375
Ranch .....No.	3,699	60,826
Other .....No.	4,820	26,886
(Total basic plans)	(99,767)	(1,617,087)
Farm .....acres	18,913,360	318,765,171
Ranch .....acres	14,698,628	192,811,199
Other .....acres	414,687	4,388,381
(Total basic plans, acres)	(34,026,675)	(515,964,751)
Basic plans canceled:		
Farm .....No.	44,508	—
Ranch .....No.	1,602	—
Other .....No.	467	—
(Total plans canceled)	(46,577)	—
Farm .....acres	8,882,328	—
Ranch .....acres	5,682,430	—
Other .....acres	31,141	—
(Total plans canceled, acres)	(14,595,899)	—
Basic plans revised:		
Farm .....No.	36,120	—
Ranch .....No.	2,757	—
Other .....No.	187	—
(Total plans revised)	(39,064)	—
Farm .....acres	10,994,610	—
Ranch .....acres	11,949,574	—
Other .....acres	30,561	—
(Total plans revised, acres)	(22,974,745)	—
Consultive Services		
Services provided .....No.	112,337	—
Recipients .....No.	59,527	—
Basic data for use in comprehensive plans .....No.	921	—
Basic data for use in comprehensive plans .....acres	21,041,551	—
Properties adequately treated .....No.	1,754	—
Properties adequately treated .....acres	70,654	—
Operating Units		
Total operating units .....No.	8,811	4,732,787
Total operating units ...acres	1,644,471	1,351,102,271
Other units .....No.	5,574	1,200,390
Group Conservation Plans and Services		
Group investigations .....No.	4,157	37,677
Group investigations ....acres	3,460,685	31,505,209
Group plans prepared ....No.	3,214	36,795
Group plans prepared ...acres	2,177,077	26,456,331
Landowners or users in groups .....No.	26,363	267,343
Services provided on jobs..No.	55,932	—
Great Plains Conservation Program		
Applications received .....No.	4,307	28,256
Applications received .....acres	6,682,649	55,890,705
Contracts signed .....No.	3,783	23,772
Contracts signed .....acres	6,069.430	45,210,250
Contract modifications ....No.	16,197	81,814

Progress items	Fiscal year 1966	Cumulative to June 30, 1966
Great Plains Conservation Program—Continued		
Contracts terminated:		
By mutual consent .....No.	117	498
By mutual consent ....acres	219,453	942,708
For cause .....No.	89	482
For cause .....acres	63,942	416,906
By expiration .....No.	1,625	5,746
By expiration .....acres	2,386,490	8,897,655
(Total terminations, No.)	(1,831)	(6,726)
(Total terminations, acres)	(2,669,885)	(10,257,269)
Cropland before GP contract, acres	978,070	6,851,345
Planned cropland conversion, acres	185,123	1,476,553
Agricultural Conservation Program		
Referrals received F.Y. 1966 No.	354,851	—
Referrals received P.Y. 1965 No.	—	383,423
Referrals serviced F.Y. 1966 No.	346,681	—
Referrals serviced P.Y. 1965 No.	—	368,278
Applachian Land Stabilization and Conservation Program		
Conservation and development plans approved ....No.	5,853	—
Technical referrals serviced No.	401	—
Cropland Conversion Program		
CCP referrals received ...No.	210	—
CCP referrals serviced ....No.	526	—
CAP referrals serviced ....No.	30	—
Soil Surveys		
Standard soil surveys:		
High intensity .....acres	1,957,016	27,775,207
Medium intensity ....acres	40,983,846	518,125,201
Low intensity .....acres	10,438,482	82,702,591
(Total mapping)	(53,379,344)	(628,602,999)
Reconnaissance .....acres	3,777,752	14,166,607
Soil conservation surveys..acres	1,825,847	274,653,417
Soil conservation surveys canceled or converted ..acres	14,389,835	—
Supplemental soil surveys acres	7,806,306	—
Snow Surveys and Water-Supply Forecasting		
Snow course measurements.No.	4,745	—
Aerial snow marker readings .....No.	854	—
Mountain precipitation gage readings .....No.	1,119	—
Soil moisture readings ....No.	1,325	—
River stations for which numerical forecasts issued...No.	488	—
Numerical forecasts issued No.	2,396	—
Income-Producing Recreation Enterprises		
Landowners with one or more income-producing recreation enterprises .....No.	4,266	34,740
Landowners with recreation enterprises as primary income source .....No.	524	3,290
Landowners with recreation enterprises as primary income source .....acres	147,412	1,231,288
Public Recreation Developments		
Recreation or fish and wildlife developments established as part of watershed projects.No.	8	20

Summary of Progress, Fiscal Year 1966 (continued)

Total reportable progress in soil and water conservation programs assisted by the Soil Conservation Service

Practices	Fiscal year 1966	On the land June 30, 1966
Conservation Practices Applied		
Bedding ..... acres	23,369	452,233
Brush control ..... acres	3,668,457	31,876,068
Irrigation canal or lateral ..... miles	478	37,577
Cattle walkway ..... miles	11	257
Chiseling and subsoiling ..... acres	624,316	3,564,712
Clearing and snagging ..... miles	270	2,243
Conservation cropping system ..... acres	21,876,363	155,139,459
Contour farming ..... acres	4,111,646	42,795,278
Contour furrowing ..... acres	57,474	703,256
Contouring orchard, etc. ..... acres	8,425	187,814
Controlled burning ..... acres	382,318	3,186,540
Cover and green manure crop ..... acres	3,927,526	27,414,907
Critical area planting ..... acres	105,169	1,505,260
Crop residue use ..... acres	17,114,742	112,731,349
Cutback border ..... miles	111	1,538
Dam, diversion ..... No.	799	20,865
Dam, multiple purpose ..... No.	379	4,050
Debris basin ..... No.	2,037	82,041
Range deferred grazing ..... acres	14,190,351	48,916,804
Desilting area ..... acres	485	3,506
Dike and levee ..... miles	250	9,067
Irrigation ditch and canal lining ..... miles	1,424	20,478
Ditchbank seeding ..... miles	1,061	18,778
Diversion ..... miles	3,358	89,922
Dune stabilization ..... acres	1,100	83,474
Emergency tillage ..... acres	245,441	3,181,231
Farm pond ..... No.	51,935	1,475,708
Farmstead and feedlot windbreak ..... acres	31,029	634,803
Field border planting ..... miles	1,272	39,700
Irrigation field ditch ..... miles	3,149	121,611
Field windbreak ..... miles	3,717	79,743
Firebreak ..... miles	9,405	122,338
Fish and crop rotation ..... acres	4,080	14,618
Fishpond stocking ..... No.	45,069	783,299
Fishpond management ..... No.	24,583	146,593
Floodwater diversion ..... feet	42,519	957,502
Floodwater-retarding structure ..... No.	732	8,283
Floodway ..... miles	29	403
Grade stabilization structure ..... No.	11,493	196,850
Grasses and legumes in rotation ..... acres	1,582,237	19,992,033
Grassed waterway or outlet ..... acres	85,568	1,599,001
Hedgerow planting ..... miles	324	29,898
Hillside ditch ..... miles	369	7,217
Irrigation pipeline ..... miles	3,962	48,637
Irrigation storage reservoir ..... No.	1,160	38,729
Irrigation system, sprinkler ..... No.	3,907	93,888
Irrigation system, surface and subsurface ..... No.	4,521	111,793
Irrigation system, tailwater recovery ..... No.	596	7,334
Irrigation water management ..... acres	2,805,073	12,217,649
Land clearing ..... acres	645,758	11,607,918
Drainage land grading ..... acres	31,674	190,413
Irrigation land leveling ..... acres	447,379	8,571,149
Land smoothing ..... acres	330,405	4,854,932
Livestock exclusion ..... acres	810,756	19,187,039
Minimum tillage ..... acres	1,292,608	8,054,973
Drainage main or lateral ..... miles	7,640	278,614
Mole drain ..... miles	29,166	45,278
Mulching ..... acres	30,969	440,676
Mulch planting ..... acres	41,427	162,920

Practices	Fiscal year 1966	On the land June 30, 1966
Conservation Practices Applied—Continued		
Woodland natural seeding ..... acres	78,780	2,816,969
Obstruction removal ..... acres	32,905	744,092
Pasture and hayland management ..... acres	8,994,833	30,041,064
Pasture and hayland renovation ..... acres	1,512,417	18,328,281
Pasture and hayland planting ..... acres	2,209,924	45,434,000
Pipeline for livestock water ..... miles	1,634	15,748
Pitting ..... acres	14,162	153,788
Plow planting ..... acres	115,439	1,426,416
Pond sealing or lining ..... No.	773	9,110
Range proper use ..... acres	67,008,778	179,706,513
Woodland proper grazing ..... acres	1,338,980	9,279,193
Pumped well drain ..... No.	8	120
Pumping plant for water control ..... No.	1,939	42,837
Range renovation ..... acres	13,485	1,406,119
Range seeding on converted land ..... acres	164,149	4,560,543
Range seeding ..... acres	361,161	7,699,489
(Total range seeding, acres)	(525,310)	(12,260,032)
Irrigation pit or regulating reservoir ..... No.	1,818	40,332
Regulating water in drainage systems ..... acres	16,389	534,710
Rock barrier ..... miles	4	53
Range rotation—deferred grazing ..... acres	2,302,296	10,165,570
Row arrangement ..... acres	440,426	2,566,533
Recreation access road ..... miles	566	4,852
Recreation area stabilization ..... acres	1,342	24,272
Recreation area planting ..... acres	19,381	113,973
Recreation area pruning and thinning ..... acres	6,162	36,385
Recreation land grading and shaping ..... acres	17,338	78,942
Recreation trail and walkway ..... miles	217	2,103
Spoilbank spreading ..... miles	4,681	121,718
Spring development ..... No.	4,119	88,555
Stock trail ..... miles	123	2,988
Streambank protection ..... miles	469	5,041
Stream channel improvement ..... miles	1,556	11,140
Stream channel stabilization ..... miles	20	586
Stripcropping, contour ..... acres	200,415	5,395,221
Stripcropping, field ..... acres	88,731	1,635,166
Stripcropping, wind ..... acres	352,073	13,401,369
(Total stripcropping, acres)	(641,219)	(20,431,756)
Structure for water control ..... No.	75,610	1,383,665
Stubble mulching ..... acres	3,385,423	17,835,788
Drainage field ditch ..... miles	5,080	152,408
Terrace, basin ..... miles	133	2,466
Terrace, gradient ..... miles	19,610	826,928
Terrace, level ..... miles	12,581	364,194
Terrace, parallel ..... miles	6,080	40,341
(Total terraces, miles)	(38,404)	(1,233,929)
Tile drain ..... miles	25,553	650,785
Tile system structure ..... No.	8,691	157,275
Toxic salt reduction ..... acres	82,161	1,205,938
Tree planting ..... acres	279,357	12,294,883
Trough or tank ..... No.	10,645	311,917
Vegetative barrier ..... miles	421	6,414
Vertical drain ..... No.	40	1,607
Waterspreading ..... acres	26,287	838,287

Summary of Progress, Fiscal Year 1966 (continued)

Total reportable progress in soil and water conservation programs assisted by the Soil Conservation Service

Practices	Fiscal year 1966	On the land June 30, 1966
Conservation Practices Applied—Continued		
Well ..... No.	7,441	370,060
Wildlife habitat preservation ..... acres	1,599,898	9,316,239
Wildlife wetland development ..... acres	59,984	806,708
Wildlife habitat development ..... acres	238,135	2,914,691
Wildlife wetland preservation ..... acres	231,375	2,167,172
Wildlife watering facility . No.	484	5,072
Woodland direct seeding . acres	11,797	477,338
Woodland harvest cutting acres	802,859	14,489,992
Woodland intermediate cutting ..... acres	837,330	14,019,749
Woodland interplanting . acres	28,378	814,239
Woodland pruning ..... acres	22,133	550,899
Woodland thinning ..... acres	55,856	1,523,630
Woodland underplanting . acres	24,600	829,899
Woodland weeding ..... acres	351,260	9,012,610
Land Treated		
Land adequately treated . acres	25,274,334	265,243,043
Land Use Conversions[1]		
Cropland to grassland ... acres	1,396,383	12,829,115
Cropland to woodland ... acres	80,537	1,450,871
Cropland to wildlife recreation ..... acres	61,993	589,057
Cropland to "other" ... acres	55,000	2,507,508
All other uses to cropland . acres	230,140	3,573,639
All other uses (except cropland) to wildlife-recreation .. acres	248,538	2,237,515

[1] Conversions on the land June 30, 1966, are estimates of conversions since July 1, 1962.

approved for operations and another 482 projects totaling 42.6 million acres approved for planning. A total of 2,502 applications covering 181.6 million acres have been submitted to the Soil Conservation Service for consideration.

The community development benefits of the projects are becoming more evident with each passing year. New municipal, domestic, and agricultural water supplies, new industries, and new recreation facilities have brought new jobs, income, security, and pleasure to the people of rural communities that have combined broad-scale resource planning with the primary objective of flood prevention in watershed projects.

As these results have become more widely known, there has been a marked trend toward multipurpose projects in new proposals throughout the country. As of June 30, 1966, more than half the projects approved for operations included multiple purposes, compared to only 21 percent in 1957.

Of 92 watershed work plans completed during fiscal 1966, 70 of them, or 76 percent, included purposes in addition to flood prevention. Public recreation development was a part of 28 of the work plans. Municipal and industrial water-supply storage was provided for in 13 projects.

Specific flood-prevention measures installed in 1966 included 732 floodwater-retarding structures, 11,493 grade-stabilization structures, 29 miles of floodways, 250 miles of dikes and levees, and 1,556 miles of stream-channel improvement.

River basin surveys

At the end of the fiscal year, SCS was participating in 43 separate surveys of water and related land resources of the Nation's major river basins in cooperation with other agencies. The investigations cover about 75 percent of the total land area of the 48 mainland States.

Eight comprehensive framework (type I) studies and 15 comprehensive detailed (type II) studies were being conducted under the auspices of the newly formed Water Resources Council.

Of 20 cooperative comprehensive studies (type IV), 17 were in cooperation with State and local agencies, and 3 with the Corps of Engineers.

Soil conservation districts

Soil conservation districts responded to the changing character of land use and conservation problems by modifying their programs to include conservation not only of soil and water but of other resources and to give more attention to areas of urban expansion.

By year's end, 2,387 or 82 percent of the 2,995 districts being assisted by SCS had entered into new working agreements with the Department of Agriculture to cover such broadened long-range programs. These include 19 new districts formed during the year.

Changes in district organization and boundaries during the year resulted in a net increase of six districts and 15,711,351 acres over the area included a year ago. Conservation districts in the United States, Puerto Rico, and the Virgin Islands now contain 1,768,992,000 acres and include nearly 99 percent of the farms and 95 percent of the land in farms.

More than 2 million landowners controlling 685,513,144 acres are cooperating with the districts, and 1,617,087 of them have basic conservation plans on 515,964,751 acres. The Soil Conservation Service assisted 99,767 cooperators prepare basic plans for 34,026,675 acres in fiscal 1966. Districts added 115,419 new cooperators controlling 40,599,514 acres during the year.

During the year SCS assisted 1,167,186 cooperators in planning or applying conservation work;

744,274 of them applied at least 1 conservation practice.

The table shows the amounts of each of 124 separate practices applied during the year with direct technical assistance from SCS or from programs in which SCS participates.

The planned treatment was completed on 25,274,334 acres during the year, equivalent to 74 percent of the acreage for which basic plans were prepared.

This brought the acreage adequately treated to 265,243,043 acres, equivalent to about 51 percent of the total covered by basic conservation plans.

Soil surveys

During fiscal year 1966 detailed soil surveys were completed on 55,205,191 acres, bringing the cumulative total for detailed soil surveys (published and unpublished) to 903,256,416 acres.

In addition, reconnaissance soil surveys were completed on 3,777,752 acres, bringing the cumulative total to 14,166,607 acres.

A review of uses being made of soil surveys and the benefits resulting from their use showed that they generally bring at least $2 of return the first year for each dollar spent in the entire cost of making and publishing the survey. The average published soil survey is useful for at least 25 years.

In areas of high intensity land use, such as rapidly growing metropolitan areas, cost savings resulting from using published soil surveys over the 25 years averaged $123 for each dollar of survey cost. In mixed farming areas of medium intensity land use the average benefit-cost ratio was about $61 to $1; and in range and woodland areas of low intensity land use, $46 to $1.

Land conversions

Adjustments in land use to better match land capabilities as a part of good conservation practice shifted approximately 1½ million acres out of cultivation into other uses in 1966.

The pace of such conversions slowed down somewhat from recent years, however, as farmers became more aware of needs for food supplies in other parts of the world. Cropland conversions in 1966 were 27 percent less than in 1965.

Most of the converted cropland, 1,396,383 acres, was established in permanent grassland. Of the remainder, 80,537 acres went into woodland, 61,993 acres into wildlife and recreation, and 55,000 acres to other uses.

Outdoor recreation

Rural landowners continued to establish new outdoor recreation facilities at an accelerated pace in 1966.

They converted 310,531 acres of land to recreation and wildlife use, a 9 percent increase over the previous year. A total of 4,266 landowners established new income-producing recreation enterprises, and 524 converted to recreation as a primary source of income on a total of 147,412 acres.

Conservation practices established on recreation land included 1,342 acres of recreation-area stabilization, and 19,381 acres of recreation-area planting.

Eight public recreation developments were established as part of watershed projects under Public Law 566.

Job training

The Soil Conservation Service cooperated with State conservation agencies and local soil conservation districts in a variety of projects to provide job training for disadvantaged young people under the Economic Opportunity Act.

In 33 States, SCS participated in Neighborhood Youth Corps projects by providing technical guidance and supervising the work of enrollees assigned to field office jobs in soil conservation districts.

Total of 1,456 young people got practical experience in conservation-related jobs under SCS supervision in 486 different conservation districts.

In addition, SCS participated in work-study programs involving 125 college students at 89 locations in 15 States.

International assistance

As a means of developing agriculture to increase food production, the Soil Conservation Service provided technical assistance and training to a number of nations under a variety of arrangements worked out through Agency for International Development, Food and Agriculture Organization, the State Department, and United Nations.

In fiscal 1966, SCS had 27 conservation technicians on long-term assignment to projects in Tunisia, Thailand, Nigeria, Nicaragua, Brazil, and Algeria. Some 30 SCS technicians were in 17 foreign countries on short-term assignments.

New programs were started in India and Ecuador in 1966, and SCS will soon have five technicians stationed in Vietnam for an 18 months' period.

In addition, SCS provided training in the United States for 429 visitors from 52 countries throughout the world, who spent a total of approximately 5,000 man-days at field locations and in the Washington headquarters.

Operations improvement

The Soil Conservation Service accomplished cost reductions of $9,972,000 in its Washington and field operations and diverted the savings to other essential uses in fiscal 1966.

The savings were obtained primarily by producing more units of work through improved procedures and organization, resulting in accomplishments equal to the addition of approximately 137 man-years of personnel using the old methods. ♦

Regional Accounts for Policy Decisions. EDITED BY WERNER Z. HIRSCH. *1966. Johns Hopkins Press, Baltimore (for Resources for the Future). 230 pp. $6.50.*

This is a collection of papers and comments presented at the third conference of the Committee on Regional Accounts held in December 1964. It covers results of efforts to investigate regional accounts and information systems helpful in making policy decisions affecting urban, regional, and national planning.

Topics treated are: Urban renewal: objectives, analyses, and information; regional accounts for public school decisions; urban economic development; State planning and development in a Federal system; influence of national decisions on regional economics; criteria for evaluation of regional development programs. Contributors are authorities in their fields. Werner Hirsch, chairman of the committee, is author of the introduction.

Regional accounts, as conceived in this book, are organized systems of information about resources, costs, and returns, in relation to alternative programs for specific regions or problem areas, designed "to improve both public and private decision making."

The papers describe, sometimes at a highly technical level, the construction of such accounts.

The book deserves consideration by more than professional planners. Urban and regional planning efforts affect the entire Nation when the resulting programs are put into effect. This volume provides guidelines in a field where more direction and coordination are urgently needed.—JOHN W. BARNARD, *Resource Development Division, SCS, Washington, D. C.*

Protecting Our Food: The Yearbook of Agriculture 1966. *U. S. Dept. of Agr. 386 pp., illus., $2.50.*

In 416 pages and 105 photographs, the 1966 *Yearbook of Agriculture,* portrays in detail the course of our food supply from the farmer's field to the saucepan on the stove. It describes every stage of safeguarding food from insects, rodents, bacterial contamination, and loss of body-building values.

Of most interest to soil conservationists, perhaps, are the first two articles: "Man's Historic Struggle for Food," by Raymond P. Christensen, and "Our Food Abundance," by Glen T. Barton, both of the Economic Research Service. The first surveys the world food situation in relation to population growth and resources; the other the spectacular productivity of American agriculture.

The rest of the book is devoted to the more specific topics of food protection and distribution.—B. O.

New Publications

Development Potential of U. S. Continental Shelves. *1966. U. S. Dept. Commerce, Environmental Science Services Administration. (About 150 pp.) $1.25.* Report on the Battelle Memorial Institute's study of the U. S. Coast and Geodetic Survey's products and services as related to economic activity in the U. S. Continental shelf regions. The report presents data on mining and petroleum, marine engineering, recreation, health and welfare, transportation, food and agriculture, defense and space, research and development, and other industries.

Plant Ecology of Death Valley, California. BY CHARLES B. HUNT AND L. W. DURRELL. *1966. U. S. Dept. Interior, Geol. Surv. Prof. Paper 509. 68 pp., illus., and with separate maps.* Description of the composition and the vegetation in relation to the environment of plants on and along the gravel fans from below sea level to about 1,500 feet above.

Compound Interest Tables. BY ROBERT MARTY AND DAVID J. NEEBE. *1966. USDA Agr. Hbk 311. 103 pp. $0.70.* For long-term planning in forestry.

Study of Strip and Surface Mining in Appalachia. *1966. U. S. Dept. Int. 78 pp., illus. $1.* An interim report by the Secretary of the Interior to the Appalachian Regional Commission, discussing significance and nature of strip and surface mining, present conditions, effectiveness of past reclamation efforts, public interests and benefits, objectives and costs, and methods of basic reclamation.

Arizona Water. BY J. W. HARSHBARGER, D. D. LEWIS, H. E. SKIBITZKE, W. L. HECKLER, AND L. R. KISTER; REVISED BY H. L. BALDWIN. *1966. U. S. Dept. Interior. Geological Surv. Water Supply Paper 1648. 85 pp., illus.* Discusses water resources of the State, the current use of this resource, and some methods of relieving the present shortage and avoiding a future shortage.

Catalog of Federal Programs for Individual and Community Improvement. *1965. Office of Economic Opportunity. 414 pp.* A description of governmental programs to help individuals and communities meet their own goals for economic and social development.

Department of Agriculture's Role in Resource Conservation. *1966. USDA PA-781. 15 pp., illus.* "The Department of Agriculture's vast conservation activities touch the lives of everyone in the United States." This booklet tells what and how.

Handbook of Federal Aids to Communities. *1966. U. S. Dept. Commerce. 111 pp. 60 cents.* Guide to Federal financial aid programs, technical assistance, and information sources.

Soil Surveys

Lafayette County, Wisconsin. BY BRUCE G. WATSON. *1966. 137 pp. illus.; maps 4 inches to the mile (1:15,840).* Fieldwork by Burel S. Butman, Stuart W. Torrance, John J. Sund, Jr., S. Michael Shivers, Bruce G. Watson.

Fountain County, Indiana. BY RALPH H. STURM. *1966. 122 pp., illus.; maps 4 inches to the mile (1:15,840).* Fieldwork by J. Deal, K. K. Huffman, and C. Guernsey.

Elbert County, Colorado, Eastern Part. BY LYNN S. LARSEN, THOMAS G. BABER, E. L. WESSWICK, D. E. MCCOY, AND J. B. HARMAN. *1966. 79 pp., illus.; maps 3.17 inches to the mile (1:20,000).*

Rogers County, Oklahoma. BY DOCK J. POLONE. *1966. 65 pp., illus.; maps 3.17 inches to the mile (1:20,000).*

From the Administrator:

Conservationists in Community Planning

THE work of the Soil Conservation Service in the year just past involved conservationists in community planning for economic and social betterment to an extent unmatched before.

An increasing amount of time and talent of SCS field personnel went into consultation with local planning boards, in technical assistance to zoning authorities and land developers, and in helping local leadership fashion practical plans to increase income and improve living conditions in rural communities.

These human welfare goals add a new dimension to the responsibilities of conservationists. It is a worthy trend, to be applauded and encouraged.

Conservationists have much to offer to community development. The proper use and care of land and water resources are the indispensable base of sustained economic growth. But the husbandry of physical resources without relation to human goals is pointless. The deeper involvement of conservationists in community planning is long overdue and needs to be carried further.

For we still are making bad land use decisions.

We still are robbing ourselves of thousands of acres of our best agricultural land to satisfy urban expansion that could be carried out on less fertile acres.

We still are not considering enough the growing need for parklands—for keeping and developing green space—near our crowded urban centers.

We still have not made the necessary effort to relieve the mounting congestion of our cities by establishing more desirable living conditions in properly planned communities in the countryside.

We must be prepared—as conservationists—to anticipate change . . . to adjust to changing national needs . . . to be the forerunners . . . to prepare the way for reasonable and beneficial land use changes that respect the worth of a sound agricultural economy to a productive society, and the value of green acres to the spiritual comfort of our people.

That is the role of the natural resource conservationist. And it is a staggering assignment. As always, we are depending heavily on local soil and water conservation districts to accomplish more with the resources we have.

Our aim is to assure a satisfying and rewarding way of life at every economic and social level.

This development means not only more efficient and more sufficient production of food and fiber for home use and export. It means also the strengthening of the economic base so that the many other material needs of modern society are properly satisfied.

It means the careful planning of resource use and development so that all the people will benefit by the realization of national and regional economic expectations.

It means thoughtful planning so that the waterways will not become polluted and those that now are polluted will be cleansed.

It means that the beauty of the natural landscape will not be needlessly sacrificed in the urgent drive to build for an urban society.

We are working toward building a society in which the quality of the environment will be satisfactory to all of our people as part of the heritage we hope to hand down to future generations. We assure this when our concern is with the landscape as well as with the land. Esthetic values also are a product of nature.

Our task, as conservationists, is to strive for temperance. We are obliged to recognize the inevitability of natural growth, and what this means in terms of changes in land use. Our effort must be to help channel this tide for more constructive development that will benefit the Nation now and into the future.

Conservationists—and the SCS—must accept the responsibility to participate, and to contribute as only we can, to community planning at every level.

We have an assigned responsibility for leading the planning, and for providing technical assistance to Resource Conservation and Development projects, to small watershed projects, and to other formal resource conservation efforts.

New legislation gives SCS explicit authority to make soil surveys and provide soils information in areas of changing land use, as we have traditionally done in farming areas.

SCS has had experience in helping individual land owners and operators plan for proper use and conservation of their soil and water resources.

The elements of sound land use planning are the same, whether the area of concern is a single field, an individual farm unit, a small watershed, a local community, or a broad region. The same kinds of basic resource data, and the same steps of inventory, analysis, comparison of alternatives, and decision making, are required.

Soil conservationists are familiar with these procedures and can supply information needed to use them effectively.

We can expect to devote more of our energy—and rightly so—to community planning.

D. A. WILLIAMS

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